60,130-1899; 03MRA0388

IN THE SPECIFICATION

Please replace paragraph [20] with the following:

[20] When shaft 40 is turned to rotate by an actuator (not shown), eccentric ends 42 ~~and 44~~ drive bearings 36 and 38, each having an eccentric bore. As the bearings turn with the shaft ~~40~~42, they move to force the tappet gears 28, 29 and pistons 34 downwardly as shown in Figure 1, bringing brake pads 26 and 24 into contact with the rotor 22.

Please replace paragraph [22] with the following:

[22] A thin force sensor 46 is mounted between the bearing cup 44 and the cavity 52 in housing 50. This thin sensor is mounted in a location that is not along a line of force transmission between the shaft 40 and tappet gears ~~pistons~~ 28 or 29. Rather, a reaction force would be transmitted from the bearing 36 to the bearing cup 44, and then to the sensor 46. This location for the sensor 46 allows for minimal necessary change in the overall disc brake 20. Simply, the cavity 52 or the bearing cup 44 may be sized to accommodate the sensor 46.

Please replace paragraph [24] with the following:

[24] Figure 2 is a view showing the housing 50, the cavity 52, the bearing cup 44 (90° to the Figure 1), and the sensor 46. As shown, the sensor 46 is sandwiched between the bearing cup 44 and the bottom wall of the cavity 52. The sensor may be placed in a recess ~~cavity~~ created between bearing cup ~~in either~~ 44 ~~or~~ and cavity 52. As explained below, when the compressive anvil 58 is fully compressed to the depth of the cavity, no further change in resistance is produced by the sensor.

Please replace paragraph [25] with the following:

[25] Figure 3 shows the sensor 46 having an electric portion 54 receiving a small current, protective upper cover 56, an anvil 58 between electric portion 54 and the protective upper cover 56, and a cavity 60 within a housing 59 for the electric portion 54. As can be appreciated from this figure, when a force is applied from the bearing cup 44 to the protective upper ~~outer~~ cover 56, that force will be transmitted through the anvil 58 to the electric portion 54. The electric portion 54, as can be best seen in Figure 4, includes a pair of electric wires providing a small current to a central portion aligned with the anvil 58. As the anvil 58 applies an increasing force to the wires in the vicinity of the anvil 58, the resistance to electric current flow decreases.

Please replace paragraph [26] with the following:

[26] At some point, and as can be appreciated from Figure 3, the anvil and the electric portion ~~member~~ 54 will be fully compressed such that no further increase in force will be transmitted from the anvil 58 to the electric portion 54 of the sensor 46. At that point, the resistance will become static.

Please replace paragraph [29] with the following:

[29] As shown in the Figure 6 flowchart, a control utilizes information from the sensor 46 by measuring shaft rotation position (sensor 71) and then asking whether the force from the sensor 46 ~~54~~ has reached the limit point shown in Figure 5. If not, the control continues to monitor when the application of force reaches the limit. Once the force reaches the limit, a second

measurement of shaft rotation position is taken. The difference between the two shaft rotational positions is related to the air gap of the pads relative to the rotor. Then, when the brake is released, clearance can be adjusted based upon this difference. As shown, the entire difference will not typically be adjusted, but rather some portion of the difference. As an example, .5 of the distance is often utilized.